
Storm Water Pollution Prevention Plan



Storm Water Pollution Prevention Plan (SWPPP)

Permit Number: WVR _____

Prepared For:

WV Poultry Partners LLC

Development Name & Location:

WV Poultry Partners LLC - Poultry Operation

Prepared by:

Charles Kirk Wilson, PE

Date:

August 8, 2019

This Storm Water Pollution Prevention Plan (SWPPP) is provided by the West Virginia Department of Environmental Protection (WVDEP). Providing this document does not certify that the information is complete or complies with all requirements. The WVDEP claims no responsibility for omissions or inaccuracies in values or information presented to the WVDEP by businesses seeking compliance with state environmental regulations.

CERTIFICATIONS

To Be Completed by Permittee (Plans and Specifications Operational Control)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for attesting to false information, including the possibility of fine and imprisonment for knowing violations."

Robert R. Williams

304-257-7940

Name and Title

Telephone Number

Robert R. Williams

Signature

8/8/19

Date

To Be Completed by Construction Site Operator/Co-Permittee (Day-to-Day Operational Control)

"I certify that I have reviewed this document and all attachments that were prepared under professional supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for attesting to false information, including the possibility of fine and imprisonment for knowing violations."

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SWPPP Revision Documentation Form

This storm water pollution prevention plan (SWPPP) should be revised and updated to address changes in site conditions, new or revised government regulations, and additional on-site storm water pollution controls. The signature of this representative attests that the SWPPP revision information is true and accurate. Previous authors and facility representatives are not responsible for the revisions.

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1.0. CONTACT INFORMATION

<i>PERMITTEE</i>	<i>PHONE/FAX/MOBILE</i>	<i>ADDRESS</i>
<i>WV Poultry Partners 1, LLC</i>	<i>304-257-7940</i>	<i>PO Box 122 Moorefield, WV 26836</i>
<i>PROJECT CONTRACTOR</i>		
<i>Unknown at this time</i>		
<i>QUALIFIED PERSON/ 24-HOUR CONTACT</i>		
<i>Robert R. Williams</i>	<i>304-257-7940</i>	<i>PO Box 122 Moorefield, WV 26836</i>
<i>OTHER</i>		
<i>Kirk Wilson, PE</i>	<i>304-257-4818 or 304-668-0365</i>	<i>PO Box 826 Petersburg, WV 26847</i>

2.0 OBJECTIVE

A storm water pollution prevention plan must be prepared for storm water discharges that will reach Waters of West Virginia, including discharges to the Municipal Separate Storm Sewer System (MS4), and to identify and address potential sources of pollution that are reasonably expected to affect the quality of discharges from the construction site, including off-site material storage areas, overburden and stockpiles of dirt, borrow areas, equipment staging areas, vehicle repair areas, fueling areas, etc., used by the permitted project. The SWPPP must describe and ensure the implementation of practices that will be used to reduce the pollutants in storm water discharges associated with construction activity at the construction site and assure compliance with the terms and conditions of the general permit.

3.0 Non-Storm Water Discharges

All discharges authorized by this permit shall be composed entirely of storm water.

4.0 SWPPP REVIEW AND AMMENDMENTS

4.1 Review

This SWPPP must be retained on-site at the construction site or, if the site is inactive or does not have an on-site location to store the plan, a notice must be posted describing the location of the SWPPP. This SWPPP must be made readily available at the time of an on-site inspection.

4.2 Amendments

This SWPPP will be revised or updated when the following occurs:

1. Change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants and that has not been previously addressed in this SWPPP.
2. Results of inspections or investigations indicating this SWPPP is proving ineffective in eliminating or significantly minimizing pollutants in discharges authorized under the general permit.
3. To identify any new contractor and/or subcontractor that will implement a measure of the SWPPP.

All other permittees implementing portions of the SWPPP that will be impacted by a change to the SWPPP will be notified of the change in a timely fashion.

The revisions to the SWPPP will be documented on the "SWPPP Revision Documentation Form" found in the front of this document. The authorized representative with regulatory authority (corporate officer or proprietor) to approve the SWPPP shall sign the modified plan certifying that the SWPPP revision information is true and accurate.

5.0 SITE OR PROJECT DESCRIPTION

5.1 Description of Construction Activity & Environmental Impacts

Developer: WV Poultry Partners 1, LLC.

Builder: Unknown at this time

Site Location: THE PROJECT IS LOCATED NEAR OLD FIELDS, WV OFF OF COUTNY ROUTE 2, OLD FIELDS ROAD, ON THE DRAINAGE OF ANDERSON RUN, IN HARDY COUNTY.

5.2 Construction Activity with Potential Pollutants and Sources

The following lists the construction activities or materials that have the potential to contribute pollutants, including sediment, to storm water runoff.

Construction Activity and/or Material	Potential Pollutant
<ul style="list-style-type: none">Land clearing	<ul style="list-style-type: none">Sediment – Total Suspended Solids (TSS), turbidity, oil and grease, Total Petroleum Hydrocarbons (TPH)
<ul style="list-style-type: none">Excavation	<ul style="list-style-type: none">Sediment – TSS, turbidity, oil and grease, TPH
<ul style="list-style-type: none">Filling	<ul style="list-style-type: none">Sediment – TSS, turbidity, oil and grease, TPH
<ul style="list-style-type: none">Grading	<ul style="list-style-type: none">Sediment – TSS, turbidity, oil and grease, TPH
<ul style="list-style-type: none">Utilities	<ul style="list-style-type: none">Sediment – TSS, turbidity, oil and grease, TPH

5.3 Major Activities Schedule

The following schedule sheet is an intended schedule or sequence of major activities that will disturb the soil for major portions of the site. Details are provided as an attachment in Appendix C.

Schedule Sheet for Soil Disturbing Activities

Estimate Construction Start Date: August 30, 2019

Estimate Construction End Date: July 1, 2020

Activity	Estimated Time	Actual Time
Install BMPs, Basin, Traps and Diversion Ditches	20 days	
Land clearing	30 days Concurrent	
Grading	180 days Concurrent	
Excavation	180 days Concurrent	
Filling	180 days Concurrent	
Utilities – Well drilling and OH Power	30 days	
Revegetation	30 days Concurrent	
BMP SWM Conversion and Removal	10 days	

5.4 Property Acreage

The total area of the property is 362+/- acres. The total anticipated area of soils to be disturbed is 95 (LOD) acres.

5.5 Construction Activity Acreage

The total number of acres of construction activities, material storage areas, stockpiles, and borrows areas are listed below:

Activity or Material	Acres
Construction Activities (resulting in land disturbance)	95
Off-site Material Storage Areas	0
Overburden and Stockpiles of Dirt	5
Borrow Areas	0

5.6 Soil Data

Soil data for each lot is listed on a “Soil Data Sheet”. This information includes pre-construction and post-construction runoff coefficient as well as a description of the soil type.

Soil Data Sheet

Pre-construction runoff coefficient: 70

Post-construction runoff coefficient: 78

Runoff Coefficient:

High: 70-100% impervious (example: asphalt, buildings, paved surfaces)

Medium: 40-70% impervious (example: packed soils)

Low: 0-40% impervious (example: grassy areas)

Description of soil: The USDA SOIL SURVEY indicates mostly BERKS-WEIKERT CHANNERY, EDOM, MELVIN AND MASSENTTAN SILT LOAMS OF 3-25% slopes with varying depth over bedrock from 24" to 60" deep over weathered shale bedrock.

5.7 General Location Map and Site Map

The general location map found in Appendix A shows the location of the site. A detailed site map is also attached.

5.8 Erosion and Sediment Control Site Map

Site maps shall contain a North arrow with sites oriented to the North, with a minimum of five-foot topographical contours. The maps shall include:

- Nearest receiving streams, springs, surface waters to the site;
- Limits of all areas to be disturbed (LOD);
- Existing roads including public roads from which access to the site will be constructed;
- Access roads;
- Drainage patterns during and after construction with the outlet markers depicting the storm water discharge points;
- Slopes prior to constructions and anticipated conditions after grading activities;
- Location of topsoil stockpiles;
- Waste areas of 1 acre or greater within or contiguous to the construction site;
- Borrow sites of 1 acre or greater within or contiguous to the construction site;

- Locations and identification of sediment control structures;
- Total acreage and location of impervious areas after construction is complete;
- Location of rain gauge provided by the applicant
 - Or a statement the applicant will obtain the precipitation event information from a National Oceanic Atmospheric Administration (NOAA) weather station that is representative of the location and provide the Station ID Number.
- Post-development storm water management structures required by local governments
- Final storm water conveyances, including all ditches and pipe systems;
- Property boundaries and easements; and
- A legend, complete with any other information necessary to describe the project in detail.

5.9 Industrial Discharges

This project **does not** involve discharges associated with industrial activities other than commercial construction activities.

For construction occurring on an industrial site, reference existing multi-sector SWPPP, if applicable.

There **are not** dedicated concrete or asphalt plants associated with this project.

There will be no discharge of process wastewater from concrete or asphalt plants. Water from equipment and vehicle washing, wheel washing, concrete and bituminous washout, and washout from paints, oils, and other construction materials is production waste water and cannot be disposed of on site or discharged without an individual NPDES permit. It must be contained and removed for processing and proper disposal.

5.10 Receiving Waters

The first named water body that receives stormwater discharges from the site is Mill Run. (See Appendix A: General Site Location Map)

The Designated Uses for this water body are Runoff and Timber and Livestock.

5.11 WVDEP Construction General Permit, WV0115924

A copy of the WVDEP Construction General Permit, WV0115924 is included in Appendix B.

5.12 Threatened and/or Endangered Species

To be eligible for coverage under the construction stormwater permit, facilities must provide documentation on whether a listed endangered or threatened species, or critical habitat, are found with the proximity of the project. The facility used The Endangered Species Guidance provided in the Notice of Intent to help determine the status of the site. The species that must be considered in the area where this site is located are: NONE

A visual inspection of the area indicated (Check One):

- ☒ No endangered or threatened species and/or critical habitat located within the proximity of the project.
- ☐ The following species and/or critical habitat and findings were noted: NONE

NOTE: Include documentation regarding authorization under the Endangered Species Act (ESA), comprehensive site assessments, and/or BMP's that are protective of listed endangered and threatened species and/or critical habitat, where applicable.

5.13 Historical Determination

The adverse effects on historic properties must be considered before a facility can be covered by the construction general permit. The National Register of Historic Places web site was reviewed and revealed the following (Check One):

- ☒ None of the listed sites are located in the vicinity of the facility, or listed sites will not be affected by the facility.
- ☐ The following sites are located in the vicinity of the facility (West Virginia State Historic Preservation written agreement included in Appendix A.): NONE

NOTE: Include written agreement with the West Virginia State Historic Preservation Officer (SHPO) that outlines all measures to

be undertaken to mitigate or prevent adverse effects to the historic property, where applicable.

5.14 Total Maximum Daily Loading (TMDL)

The WVDEP (Check One)

- ☒ Currently, there is no TMDL established for the receiving stream that would regulate potential pollutants from the construction site.
- ☐ The enhanced BMP's chosen for this site and discussed in this SWPPP are expected to ensure that storm water discharges are protective of water quality standards.

6.0 EROSION AND SEDIMENT CONTROLS

This section includes descriptions of control measures that will be implemented to control pollutants in the storm water discharges. The control measures shall, at a minimum, be designed to effectively minimize the discharge of pollutants by design, installation, and maintenance, in order to meet effluent limitations required by 40 CFR 450.21. These limitations were incorporated into the reissued WV0115924, effective February 10, 2019.

6.1 Short and Long-Term Goals/Criteria

- Retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall.
- Select, install, and maintain control measures according to the manufacturer or designer's specifications.
- Remove sediment accumulations if sediment escapes the site at a frequency to minimize further negative effects and, whenever feasible, prior to the next storm event.
- Remove sediment from sediment traps and sedimentation ponds no later than the time that the wet storage design capacity has been reduced by 50%.
- Remove sediment from silt fences, silt socks, and straw wattles before reaching 50% of BMP height (above ground).
- Address off-site material storage areas in erosion and sediment control efforts (overburden and dirt stockpiles, borrow areas).

6.2 Best Practicable Technology (BPT)

The chosen controls shall include designs that are effective at minimizing pollutants, and should be installed and maintained to:

- Control storm water volume and velocity in ways that minimize soil erosion.
- Control storm water runoff during peak flow and total storm runoff volume to minimize channel and stream bank erosion and scour around discharge points.
- Minimize exposed soils generated during construction.
- Preserve topsoil where feasible.
- Minimize disturbance of steep slopes on site.
- Minimize sediment discharge with erosion and sediment controls that are designed and installed to address:
 - Duration, amount, frequency and intensity of precipitation,
 - Nature of resulting runoff,
 - Soil characteristics: range of particle sizes present.
- Use natural buffers around waters of the state and direct runoff to these areas, where feasible.
 - Discharges to Outstanding Natural Resource Waters and impaired streams must have a 100-foot buffer zone,
 - Explain alternative practices where site constraints limit buffer zones.
- Minimize soil compaction unless dictated by site development
- Utilize outlet structures that withdraw water from the surface of settling basins or impoundments.

6.3 Site-Specific Erosion and Sediment Controls

The erosion and sediment control methods used are listed in the “Erosion and Sediment Control Plan”. The sediment controls should address all of the requirements in Sections 6.1 and 6.2 of this SWPPP.

7.0 STABILIZATION PRACTICES

The site stabilization practices described in this SWPPP include temporary and permanent stabilization measures that ensure that disturbed portions of the site are stabilized, and that existing vegetation is preserved when possible. Final stabilization measures may include but are not limited to permanent protection such as pavement, compacted gravel, permeable pavements/pavers, buildings, stable waterways (riprap, concrete, grass or pipe), a healthy, vigorous stand of grass or natural vegetation that uniformly covers at least 70 percent of the ground, stable outlet channels

with velocity dissipation that directs site runoff to a natural watercourse, and any other approved structure or material.

7.1 Deadline to Initiate Stabilization Measures

The types of activities that constitute the initiation of stabilization include, but are not limited to:

- Prepping soil for vegetative or non-vegetative stabilization
- Applying mulch or other non-vegetative product
- Seeding or planting
- Starting stabilization practices on a portion of the area to be stabilized
- Finalizing arrangements to have stabilization product fully installed.

Except as noted below, stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has permanently ceased or 4 days for sites required to use enhanced BMP's.

- Where the initiation of stabilization measures by the 4th day, as applicable after construction activity temporarily or permanently ceases is precluded by natural causes, stabilization measures shall be initiated as soon as conditions allow.
- Where construction activity will resume on a portion of the site within 14 days from when activities ceased, (i.e., the total time period that construction activity is temporarily halted is less than 14 days) then stabilization measures do not have to be initiated on that portion of the site by the seventh day after construction activities have temporarily ceased.
- Areas where the seed has failed to germinate adequately (uniform perennial vegetative cover with a density of 70%) within 30 days after seeding and mulching must be reseeded immediately, or as soon as weather conditions allow.

7.2 Deadline to Complete Installation of Stabilization Measures

As soon as practicable, but no later than 7 days after initiation of soil stabilization measures, the site will have completed:

- Vegetative Stabilization – initial seeding or planting, and/or
- Non-Vegetative – installation or application of stabilization measures.

With extenuating circumstances like frozen conditions, stabilization measures will be completed as soon as practicable. Routine inspections will be continued until final stabilization requirements are met.

7.3 Other Deadlines

Where the site is affected by circumstances beyond the control of the Stormwater Permittee, and vegetative stabilization measures are proposed, the following deadlines apply:

- Immediately initiate, and within 7 days complete installation of temporary non-vegetative measures to prevent erosion.
- As soon as conditions allow, the activities required to plant and initially establish vegetation will proceed.

The circumstances that led to the inability to complete the deadlines outlined in sections 7.1 and 7.2 of this SWPPP will be documented, with the outline of a schedule for initiating and completing stabilization.

7.4 Stabilization Records

The stabilization practices implemented will be recorded on the "Stabilization Practice Schedule" found in the appendix. If construction activities temporarily or permanently cease, then it will be noted in the Stabilization Practice Schedule.

Stabilization Practice Schedule

Address: 1000 Old Fields Road, Old Fields, WV

Stabilization Practices	Location	Time Frame*

* Time Frame: Includes dates of major grading activities, dates when construction activities temporarily or permanently ceases on a portion of the site, date when stabilization measures are initiated.

8.0 STRUCTURAL CONTROLS

8.1 Structural Control Requirements

Sediment traps and sediment basins may be used to control solids in storm water runoff for drainage locations serving less than ten (10) acres. Sediment basins must utilize outlet structures that release water from the surface, unless infeasible.

At a minimum, super silt fence, belted reinforced silt fence, standard silt fences, 18" silt socks, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction.

8.2 Site Structural Controls

The structural controls used on each lot are listed on the Structural Controls Sheet included in the Site Information Section of the appendix. These controls are used to divert flows away from exposed soils, to limit the contact of runoff with disturbed areas, or to lessen the off-site transport of eroded soils.

Structural Control Sheet

Address: 1000 Old Fields Road, Old Fields, WV

[illegible]

9.0 STORM WATER MANAGEMENT

If any permanent storm water controls (e.g. detention ponds, catch basin filter inserts, etc.) or velocity dissipation devices are installed during the construction process to control pollutants in storm water discharges and will remain in place after the completion of construction operations will be noted on the Structural Control Sheet found in the Site Information section of the appendix.

10.0 OTHER CONTROLS

10.1 Other Control Requirements

To minimize off-site tracking of sediments and generation of dust, typical controls may include stabilized construction entrances, shoveling and sweeping, watering for dust control, etc.

All construction and waste materials that pose a potential pollutant source to the storm water runoff from the construction site will be stored in such a manner so as to prevent or minimize storm water contact.

To demonstrate that all applicable state and local regulations governing waste disposal, sanitary sewer or septic systems are being obeyed, the following practices are in place:

- The site will have the typical waste lumber, insulation, sheetrock, roofing, used paint supplies, etc. commonly found on a construction site. Either a roll off dumpster or wire fence containment will be provided for storing trash and rubbish until it can be properly disposed of. The dumpster or fence containment will be covered when not in use to prevent storm water from coming into contact with the trash and rubbish.
- Any concrete or asphalt plants associated with the project will be permitted and operated under their appropriate stormwater pollution prevention control plans.
- Any controls required for endangered or threatened species or their habitat, and/or those required by the State Historic Preservation Officer (SHPO) will be installed properly and maintained accordingly.

10.2 Other Controls at the Site:

If any other controls will be used, it will be described on the Other Control Sheet found in the Site Information in the appendix. For complex sites with more comprehensive controls, details are included in Appendix C.

Other Controls Sheet

Controls	Rationale
Dust -	Water as needed
Off-site Tracking -	Shoveling or sweeping as needed
Sewage -	Port-a-toilets for workers;
Construction Litter and Trash -	Covered dumpster to minimize waste materials contact with storm water

11.0 APPROVED LOCAL PLAN

The local requirements for an Erosion and Sediment Control Plan may or may not be met by the information contained in this SWPPP. Additional information may be requested to fully comply with these local requirements.

12.0 MAINTENANCE

All erosion and sediment control measures and other protective measures identified in this SWPPP must be maintained in effective operating condition. If through inspections the permittee determines that BMPs are not operating effectively, maintenance must be performed within 24 hours for active construction sites and before the next anticipated storm event to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Erosion and sediment controls that have been intentionally disabled, run-over, removed, or otherwise rendered ineffective must be replaced or corrected immediately upon discovery.

13.0 INSPECTIONS OF CONTROLS

The permittee shall ensure site inspections are conducted by a Qualified Person in accordance with this section. The purpose of the inspections is to ensure compliance with the approved plan, and when the approved plan is not effective at protecting water quality, the inspection is to document that plan improvements are needed.

The person(s) inspecting the site may be a staff person or a third party hired to conduct such inspections as long as they meet the definition of a Qualified Person.

The site must be inspected as listed below, unless the site discharges to sensitive waters or the site qualifies for a reduction in the inspection frequency.

- At least once every seven (7) calendar days and
- Within 24 hours of the occurrence of a precipitation event of 0.25 inches or greater, or the occurrence of runoff from snowmelt sufficient to cause a discharge.

An increase in inspection frequency is required for sites discharging to all waters except Tier 1.

For any portion of the site that discharges to a water that is classified as Tier 2 or Tier 3, or listed on the 303(d) list, inspections must be conducted in accordance with the following inspection frequencies:

- Once every four (4) calendar days, and
- Within 24 hours of the occurrence of a precipitation event of 0.25 inches or greater, or the occurrence of runoff from snowmelt sufficient to cause a discharge.

Reductions in inspection frequency may occur in accordance with the following:

Stabilized areas:

The permittee may reduce the frequency of inspections to twice per month, no more than 14 calendar days apart, in any area of the site where final stabilization has been completed. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required previous to the reduced frequency. The beginning and ending dates of this period must be recorded in the inspection report.

Exceptions:

For “linear projects”, where disturbed portions have undergone final stabilization at the same time active construction continues elsewhere, the permittee may reduce the frequency of inspections to twice per month no more than 14 calendar days apart, in any area of the site where the final stabilization has been completed. Inspect once more within 24 hours of the occurrence of a precipitation event of 0.25 inches or greater. If there are no issues or evidence of stabilization problems, further inspections may be suspended. If “wash-out” of stabilization materials and/or sediment is observed, following re-stabilization, the reduced inspection frequency is suspended. Inspections must continue until final stabilization is visually confirmed following a precipitation event of 0.25 inches or greater.

Frozen conditions:

If the permittee suspends construction activities due to frozen conditions, inspections on the site may be temporarily suspended until thawing conditions begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least three (3) months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, the permittee must immediately resume the regular inspection frequency as applicable;
- Land disturbances have been suspended and all disturbed areas of the site have been stabilized.
-

If still conducting construction activities during frozen conditions, the permittee may reduce the inspection frequency to once per month if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least three (3) months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, the permittee must immediately resume the regular inspection frequency; and
- Except for areas undergoing construction activities, disturbed areas of the site have been stabilized, the beginning and ending dates of this period must be documented in the inspection report.

14.0 CONTRACTORS AND SUBCONTRACTORS RESPONSIBILITY

Each control measure implemented on site is identified along with the person responsible for implementing that measure in the Erosion and

Sediment Control Plan found in the “Site Information” section of the appendix.

A list of contractors and subcontractors and the control measures their operations impact is listed in the “Site Information” section of the appendix. If the contractor is unknown at this time, this requirement may be waived.

All contractors and subcontractors working at the site are informed of the terms and conditions of the SWPPP and their obligation to follow the plan. In doing so, they agree not to perform their operations counter to the plan without first contacting the Permittee in order that the necessary adjustments to the SWPPP plan can be made to assure that pollutants are not discharged from the site in the storm water runoff.

15.0 UTILITY COMPANIES

Each control measure relating to the installation of utility service, is listed in the “Erosion and Sediment Control Plan” found in the “Site Information” section in the appendix.

16.0 EMERGENCY NOTIFICATION

In the event of an unauthorized discharge that causes an emergency condition, the operator shall notify the hotline (WVDEP 24-hour Elkview Emergency Response Unit) by telephone at 1-(304) 558-5938 or 1-(800) 642-3074 and the National Response Center at 1-(800)-424-8802 no later than one hour after learning of the discharge. Notification will be made regardless of the amount of the discharge. A written notification shall be provided within five (5) calendar days after the telephone notification, in accordance with the general permit requirements. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and time, and if, the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

17. EMPLOYEE TRAINING

Describe an employee training program for all on-site personnel directly involved with construction activities at all levels of responsibility that reiterates the components and goal of the SWPPP.

- Training should address topics such as spill and leak response and internal reporting, good housekeeping, and routine inspection and maintenance.

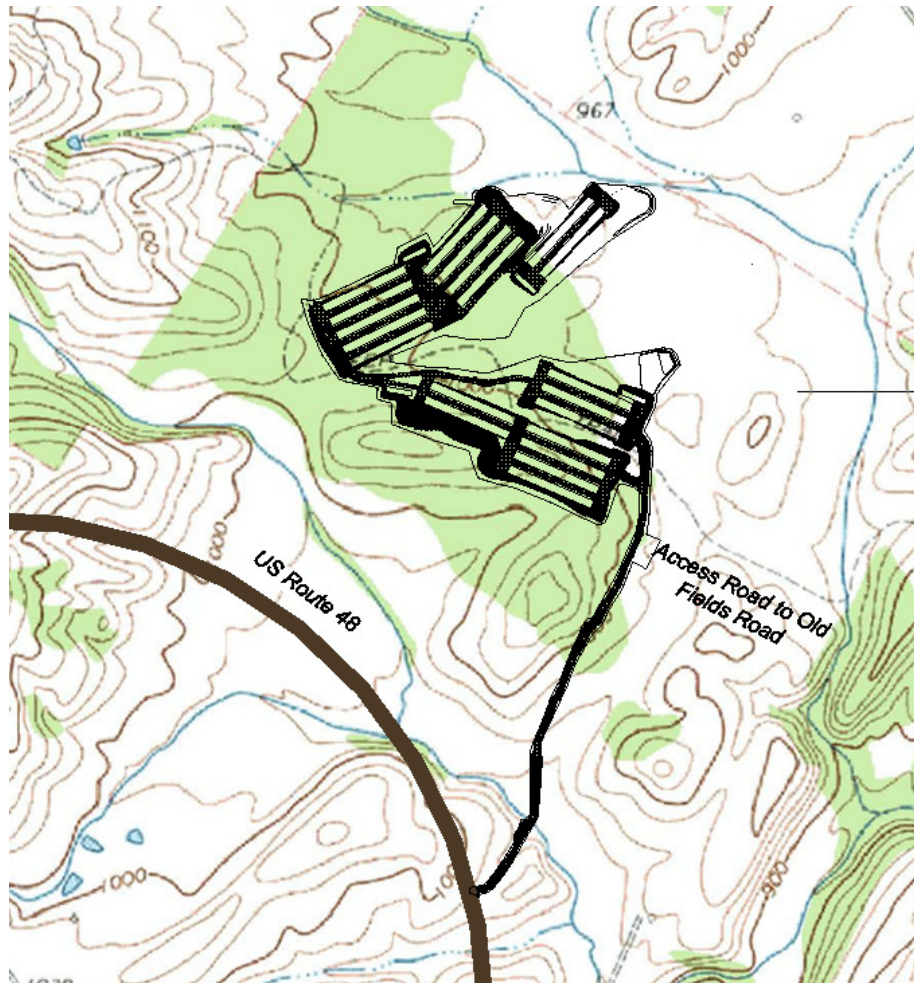
- Training shall be on a quarterly basis while construction activities are occurring.
- A list of attendees and topics covered at each training session shall be documented and maintained in the SWPPP.

APPENDIX A

General Location Map

and

Site Map



APPENDIX B

WVDEP Construction General Permit

WV0115924

APPENDIX C

Site Information

Content:	1.	General Description Sheet
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See attached Plans for items 4-8

General Description Sheet

Description of Project: THE PROJECT IS LOCATED NEAR OLD FIELDS, WV OFF OF COUTNY ROUTE 2, OLD FIELDS ROAD, ON THE DRAINAGE OF ANDERSON RUN, IN HARDY COUNTY. THE PURPOSE OF THIS PROJECT IS TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES, IN PREPARATION FOR THE CONSTRUCTION OF FOUR POULTRY HOUSE PADS FOR TWENTY 704' X 63' POULTRY HOUSES AND IN THE FUTURE THREE 40' X 200' COVERED LITTER SHEDS, AND THREE ACCESS ROAD, SIX SEDIMENT BASINS AND INCIDENTAL WORK. THE TOTAL APPROXIMATE LAND DISTURBANCE (LOD) ASSOCIATED WITH THIS PROJECT IS 95 ACRES. SEDIMENT BASINS SHALL ULTIMATELY TRAP SEDIMENT FROM 124 ACRES AND SUPER SILT FENCE OR 18" SILT SOXX WILL BE INSTALLED IN ACCORDANCE WITH THE WV DEP EROSION AND SEDIMENT CONTROL BMP MANUAL TO TRAP SEDIMENT FROM 14.65 ACRES OF PAD SITE AND ROAD IN THE BEGINNING AND TRANSITION DOWN TO 6.56 ACRES (ROADS AND NW SIDE OF PAD 4) AS THE BASINS, DIVERSIONS, ROADS AND PADS ARE CONTSTRUCTED AND RUNOFF IS DIVERTED TO SEDIMENT BASINS. THE TOTAL DISTURBED AREA CAN NOT BE DIRECTED TO SEDIMENT BASIN/TRAPS BECAUSE THERE IS INSUFFICIENT CONSTRUCTIBLE SPACE ON ROAD 1 AND THE NORTH SIDE OF PAD 4 TO INSTALL THE TRAPS TO MEET THE 3600 CF/AC STANDARD BECAUSE OF LIMITED CONSTRUCTION AREA.

Schedule Sheet for Soil Disturbing Activities

Estimate Construction Start Date: August 30, 2019

Estimate Construction End Date: July 1, 2020

Activity	Estimated Time	Actual Time
Install BMPs and Construction Entrance	20 days	
Land clearing	30 days Concurrent	
Grading	180 days Concurrent	
Excavation	180 days Concurrent	
Filling	180 days Concurrent	
Utilities – Well drilling and OH Power	30 days	
Revegetation	30 days Concurrent	
BMP SWM Conversion and Removal	10 days	

Soil Data Sheet

Pre-construction runoff coefficient: 70

Post-construction runoff coefficient: 78

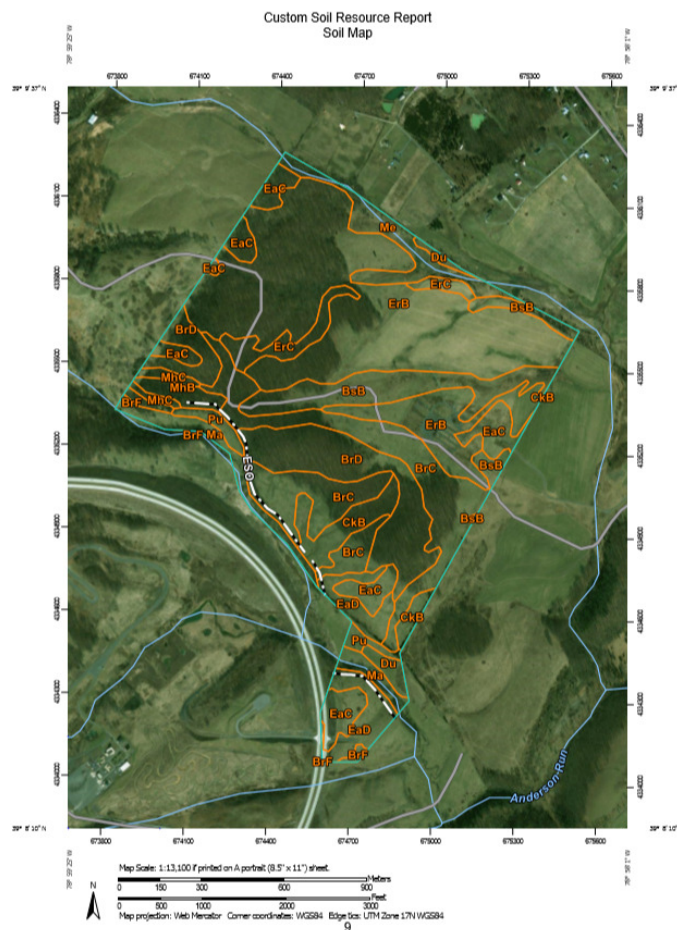
Runoff Coefficient:

High: 70-100% impervious (example: asphalt, buildings, paved surfaces)

Medium: 40-70% impervious (example: packed soils)

Low: 0-40% impervious (example: grassy areas)

Description of soil type: The USDA SOIL SURVEY indicates mostly BERKS-WEIKERT CHANNERY, EDOM, MELVIN AND MASSENTTAN SILT LOAMS OF 3-25% slopes with varying depth over bedrock from 24" to 60" deep over weathered shale bedrock.



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BrC	Berks-Weikert channery silt loams, 8 to 15 percent slopes	61.4	15.1%
BrD	Berks-Weikert channery silt loams, 15 to 25 percent slopes	43.4	10.7%
BrF	Berks-Weikert channery silt loams, 25 to 70 percent slopes	2.1	0.5%
BsB	Brinkerton variant silt loam, 3 to 8 percent slopes	31.4	7.7%
CkB	Clarksburg channery silt loam, 3 to 8 percent slopes	13.9	3.4%
Du	Dunning silty clay loam	4.3	1.1%
EaC	Edom silt loam, 8 to 15 percent slopes	25.8	6.4%
EaD	Edom silt loam, 15 to 25 percent slopes	17.5	4.3%
ErB	Ernest silt loam, 3 to 8 percent slopes	152.0	37.5%
ErC	Ernest silt loam, 8 to 15 percent slopes	10.7	2.6%
Ma	Massanetta loam	14.0	3.5%
Me	Melvin silt loam	15.6	3.8%
MhB	Monongahela silt loam, 3 to 8 percent slopes	5.1	1.3%
MhC	Monongahela silt loam, 8 to 15 percent slopes	3.1	0.8%
Pu	Purdy silt loam	5.4	1.3%
Totals for Area of Interest		405.8	100.0%

Insert Erosion and Sediment Control Site Development Maps See attached Plans

Erosion and Sediment Control Plan See attached Plans

Insert Design Sheets See attached Plans

Insert Design Calculations

Runoff Curve Number and Runoff

Project: Sed Basin B By: Date:
Location: Checked: Date:
Developed

1. Runoff Curve Number (CN)
Cover description CN Soil Group Area(Acre)
Woods (Good) 70 C 7.860
Gravel Streets, Pads and Buildings 89 C 0.440
Pasture Grassland Range (Good) 74 C 0.000
Row Crops - C (Good) 82 C 0.000

CN (weighted): 71.0
Total Area: 8.300 Acre

2. Runoff
Return Period: 25 YEAR
Rainfall, P: 5.40 in
Runoff, Q: 2.4240 in
Runoff Volume: 1.6766 Acre-Ft 73,032 CF
Time of Concentration (SCS) Wed

Project: Sed Basin B By: Date:
Location: Checked: Date:
Developed

Curve Number : 71
Length of Flow : 850.00 ft
Average Land Slope : 8.90 %

Time of Concentration : 0.202 hrs, 12.1 mins

Graphical Peak Discharge

Project: Sed Basin B By: Date:
07/10/19

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 8.3000Acres

Runoff Curve Number:.....CN = 71

Time of Concentration:.....Tc = 12.15 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 25

3. Rainfall, P(24-hour).....in = 5.40

4. Initial abstraction, Ia..... = 0.8169

5. Compute Ia/P..... = 0.1513

6. Unit peak discharge, qu.....csm/in = 770.777

7. Runoff, Q.....in = 2.4234

8. Pond & swap adjustment factor,...Fp = 1.00

9. Peak Discharge, qp.....cfs = 24.224

48" Diameter Riser with 12" Culvert will pass 25 yr Storm Event as all but 3" of the Storm Runoff will be retained in the Basin. With 12" of Freeboard the Riser will pass 16.17 cfs.

Runoff Curve Number and Runoff

T

Project: Sed Basin C By: Date:
Location: Checked: Date:
Developed

1. Runoff Curve Number (CN)
Cover description CN Soil Group Area(Acre)
Woods (Good) 70 C 0.000
Gravel Streets, Pads and Buildings 89 C 14.850
Pasture Grassland Range (Good) 74 C 0.300
Row Crops - C (Good) 82 C 0.000

CN (weighted): 88.7
Total Area: 15.150 Acre

2. Runoff
Return Period: 25 YEAR
Rainfall, P: 5.40 in
Runoff, Q: 4.1244 in
Runoff Volume: 5.2071 Acre-Ft
Time of Concentration (SCS)

Project: Sed Basin C By: Date: Location:
Checked: Date:

Curve Number : 89
Length of Flow : 1620.00 ft
Average Land Slope : 4.60 %

Time of Concentration : 0.265 hrs, 15.9 mins

Graphical Peak Discharge T

Project: Sed Basin C By: Date:

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 15.1500Acres

Runoff Curve Number:.....CN = 89

Time of Concentration:.....Tc = 15.93 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 25

3. Rainfall, P(24-hour).....in = 5.40

4. Initial abstraction, Ia..... = 0.2472

5. Compute Ia/P..... = 0.0458

6. Unit peak discharge, qu.....csm/in = 718.258

7. Runoff, Q.....in = 4.1560

8. Pond & swap adjustment factor,...Fp = 1.00

9. Peak Discharge, qp.....cfs = 70.662

48" Diameter Riser with 12" Culvert will pass 25 yr Storm Event as all but 2" of the Storm Runoff will be retained in the Basin. The Skimmer discharges at 22.80 cfs and with 12" of Freeboard the Riser will pass 14.35 cfs for total discharge capacity after storage of 37.15 cfs.

Runoff Curve Number and Runoff

Project: Sed Basin D By: Date:
Location: Checked: Date:
Developed

1. Runoff Curve Number (CN)

Cover description	CN	Soil Group	Area(Acre)
Woods (Good)	70	C	0.000
Gravel Streets, Pads and Buildings	89	C	14.020
Pasture Grassland Range (Good)	74	C	4.250
Row Crops - C (Good)	82	C	0.000

CN (weighted): 85.5
Total Area: 18.270 Acre

2. Runoff
Return Period: 25 YEAR
Rainfall, P: 5.40 in
Runoff, Q: 3.7917 in
Runoff Volume: 5.7728 Acre-Ft

Time of Concentration (SCS)

Project: Sed Basin D By: Date:
Location: Checked: Date:
Developed

Curve Number : 86
Length of Flow : 3025.00 ft
Average Land Slope : 1.15 %

Time of Concentration : 0.980 hrs, 58.8 mins

Graphical Peak Discharge

Project: Sed Basin D By: Date:
Location: Checked: Date:
Developed

1. Data:

Drainage area:.....A = 18.2700Acres

Runoff Curve Number:.....CN = 86

Time of Concentration:.....Tc = 58.78 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 25

3. Rainfall,P(24-hour).....in = 5.40

4. Initial abstraction, Ia..... = 0.3256

5. Compute Ia/P..... = 0.0603

6. Unit peak discharge, qu.....csm/in = 364.603

7. Runoff, Q.....in = 3.8419

8. Pond & swap adjustment factor,...Fp = 1.00

9. Peak Discharge, qp.....cfs = 39.988

48" Diameter Riser with 12" Culvert will pass 25 yr Storm Event as all of the Storm Runoff will be retained in the Basin. The Skimmer discharges at 26.40 cfs and with 12" of Freeboard the Riser will pass 9.67 cfs for total discharge capacity after storage of 33.07 cfs.

Runoff Curve Number and Runoff

Project: Sed Basin D1 By: Date:
Location: Checked: Date:
Developed

1. Runoff Curve Number (CN)

Cover description	CN	Soil Group	Area(Acre)
Woods (Good)	70	C	0.000
Gravel Streets, Pads and Buildings	89	C	19.010
Pasture Grassland Range (Good)	74	C	2.350
Row Crops - C (Good)	82	C	0.000

CN (weighted): 87.3
Total Area: 21.360 Acre

2. Runoff
Return Period: 25 YEAR
Rainfall, P: 5.40 in
Runoff, Q: 3.9819 in
Runoff Volume: 7.0878 Acre-Ft

Time of Concentration (SCS)

Project: Sed Basin D1 By: Date:
Location: Checked: Date:
Developed

Curve Number : 87
Length of Flow : 1765.00 ft
Average Land Slope : 1.70 %

Time of Concentration : 0.505 hrs, 30.3 mins

Graphical Peak Discharge

Project: Sed Basin D1 By: Date:
Location: Checked: Date:
Developed

1. Data:

Drainage area:.....A = 21.3600Acres

Runoff Curve Number:.....CN = 87

Time of Concentration:.....Tc = 30.29 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 25

3. Rainfall,P(24-hour).....in = 5.40

4. Initial abstraction, Ia..... = 0.2989

5. Compute Ia/P..... = 0.0553

6. Unit peak discharge, qu.....csm/in = 531.112

7. Runoff, Q.....in = 3.9454

8. Pond & swap adjustment factor,...Fp = 1.00

9. Peak Discharge, qp.....cfs = 69.936

48" Diameter Riser with 15" Culvert will pass 25 yr Storm Event as all but 1.25' of the Storm Runoff will be retained in the Basin. The Skimmer discharges at 22.75 cfs and with 12" of Freeboard the Riser will pass 20.80 cfs for total discharge capacity after storage of 43.55 cfs.

Runoff Curve Number and Runoff

Project: Sed Basin E1 By: Date: Location:
Checked: Date:

Developed

Cover description	CN	Soil Group	Area(Acre)
Woods (Good)	70	C	0.000
Gravel Streets, Pads and Buildings	89	C	6.230
Pasture Grassland Range (Good)	74	C	2.240
Row Crops - C (Good)	82	C	0.000

CN (weighted): 85.0
Total Area: 8.470 Acre

2. Runoff
Return Period: 25 YEAR
Rainfall, P: 5.40 in
Runoff, Q: 3.7429 in
Runoff Volume: 2.6419 Acre-Ft
Time of Concentration (SCS)

Project: Sed Basin E1 By: Date:
Location: Checked: Date:

Developed

Curve Number : 85
Length of Flow : 1510.00 ft
Average Land Slope : 3.95 %

Time of Concentration : 0.314 hrs, 18.8 mins

Graphical Peak Discharge

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 8.4700Acres

Runoff Curve Number:.....CN = 85

Time of Concentration:.....Tc = 18.85 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 25

3. Rainfall, P(24-hour).....in = 5.40

4. Initial abstraction, Ia..... = 0.3529

5. Compute Ia/P..... = 0.0654

6. Unit peak discharge, qu.....csm/in = 669.694

7. Runoff, Q.....in = 3.7395

8. Pond & swap adjustment factor, Fp = 1.00

9. Peak Discharge, qp.....cfs = 33.143

48" Diameter Riser with 12" Culvert will pass 25 yr Storm Event as all of the Storm Runoff will be retained in the Basin. The Skimmer discharges at 14.87 cfs and with 12" of Freeboard the Riser will pass 9.80 cfs for total discharge capacity after storage of 24.67 cfs.

Runoff Curve Number and Runoff

Project: Sed Basin E2 By: Date:
Location: Checked: Date:

Developed

Cover description	CN	Soil Group	Area(Acre)
Woods (Good)	70	C	0.000
Gravel Streets, Pads and Buildings	89	C	5.860
Pasture Grassland Range (Good)	74	C	1.240
Row Crops - C (Good)	82	C	0.000

CN (weighted): 86.4
Total Area: 7.100 Acre

2. Runoff
Return Period: 25 YEAR
Rainfall, P: 5.40 in
Runoff, Q: 3.8811 in
Runoff Volume: 2.2963 Acre-Ft

Time of Concentration (SCS)

Project: Sed Basin E2 By: Date:
Location: Checked: Date: Developed

Curve Number : 86
Length of Flow : 1005.00 ft
Average Land Slope : 2.20 %

Time of Concentration : 0.293 hrs, 17.6 mins

Graphical Peak Discharge

Project: Sed Basin E2 By: Date:

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 7.1000Acres

Runoff Curve Number:.....CN = 86

Time of Concentration:.....Tc = 17.60 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 25

3. Rainfall, P(24-hour).....in = 5.40

4. Initial abstraction, Ia..... = 0.3256

5. Compute Ia/P..... = 0.0603

6. Unit peak discharge, qu.....csm/in = 689.492

7. Runoff, Q.....in = 3.8419

8. Pond & swap adjustment factor, Fp = 1.00

9. Peak Discharge, qp.....cfs = 29.387

48" Diameter Riser with 12" Culvert will pass 25 yr Storm Event as all of the Storm Runoff will be retained in the Basin. The Skimmer discharges at 6.80 cfs and with 12" of Freeboard the Riser will pass 19.86 cfs for total discharge capacity after storage of 26.66 cfs.

Pre-Post Calculations

Pre-Construction Peak Flow

Runoff Curve Number and Runoff Thu Jun 27 15:04:15 2019

Project: WV Poultry Partners By: Date: 06/27/19
Location: Checked: Date:
Present

1. Runoff Curve Number (CN)
Cover description CN Soil Group Area(Acres)
Woods (Good) 70 C 82.270
Gravel Streets, Pads and Buildings 59 C 0.000
Pasture Grassland Range (Fair) 79 C 86.060
Row Crops - C (Good) 82 C 51.650

CN (weighted): 75.3
Total Area: 219.000 Acres

2. Runoff
Return Period: 1 YEAR
Rainfall, P: 2.48 in
Runoff, Q: 0.0871 in
Runoff Volume: 12.7221 Acres-Ft

Time of Concentration (SCS) Thu Jun 27 15:06:39 2019

Project: WV Poultry Partners By: Date: 06/27/19
Location: Checked: Date: 06/27/19
Present

Curve Number : 75
Length of Flow : 4985.00 ft
Average Land Slope : 1.64 %

Time of Concentration : 1.707 hrs, 102.4 min

Graphical Peak Discharge Thu Jun 27 15:49:15 2019

Project: WV Poultry Partners By: Date: 06/27/19

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 219.000 Acres
Runoff Curve Number:.....CN = 75
Time of Concentration:.....To = 102.40 min
Storm Type:.....= II
Pond and swamp areas spread
throughout watershed:.....= 2.53 percent of A
0.1977 Acres

2. Frequency:.....yr = 1

3. Rainfall, P(24-hour):.....in = 2.48

4. Initial abstraction, Ia:.....= 0.8316

5. Compute Ia/P:.....= 0.2547

6. Unit peak discharge, q_u :.....cfs/in = 222.630

7. Runoff, Q:.....in = 0.0825

8. Pond & swamp adjustment factor, F_p :.....= 0.75

9. Peak Discharge, q_p :.....cfs = 38.864

Post-Construction Peak Flow

Runoff Curve Number and Runoff Thu Jun 27 17:40:48 2019

Project: WV Poultry Partners By: Date: 06/27/19
Location: Checked: Date:
Developed - Loss Detained Drainage Area

1. Runoff Curve Number (CN)
Cover description CN Soil Group Area(Acres)
Woods (Good) 70 C 81.370
Gravel Streets, Pads and Buildings 59 C 0.000
Pasture Grassland Range (Fair) 79 C 15.440
Row Crops - C (Good) 82 C 45.890

CN (weighted): 75.7
Total Area: 123.900 Acres

2. Runoff
Return Period: 1 YEAR
Rainfall, P: 2.48 in
Runoff, Q: 0.0892 in
Runoff Volume: 6.8957 Acres-Ft

Time of Concentration (SCS) Thu Jun 27 18:06:39 2019

Project: WV Poultry Partners By: Date: 06/27/19
Location: Checked: Date: 06/27/19
Present

Curve Number : 75
Length of Flow : 4985.00 ft
Average Land Slope : 1.64 %

Time of Concentration : 1.707 hrs, 102.4 min

Graphical Peak Discharge Thu Jun 27 17:42:10 2019

Project: WV Poultry Partners By: Date: 06/27/19

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 123.900 Acres
Runoff Curve Number:.....CN = 75
Time of Concentration:.....To = 102.40 min
Storm Type:.....= II
Pond and swamp areas spread
throughout watershed:.....= 2.53 percent of A
0.8035 Acres

2. Frequency:.....yr = 1

3. Rainfall, P(24-hour):.....in = 2.48

4. Initial abstraction, Ia:.....= 0.8316

5. Compute Ia/P:.....= 0.2547

6. Unit peak discharge, q_u :.....cfs/in = 222.630

7. Runoff, Q:.....in = 0.0825

8. Pond & swamp adjustment factor, F_p :.....= 0.75

9. Peak Discharge, q_p :.....cfs = 22.043

The increase in Runoff from the new Impervious areas is 110,891 CF.
Total Basin Retention of 72 hours is 443,880 CF.
Therefore, overall Peak Discharge for the 1-yr event is significantly decreased (to 22.043 cfs) as
result of the Sediment Basin/SWSA Controls.

Runoff Curve Number and Runoff Thu Jul 11 13:55:34 2019

Project: Culvert 13+80 By: Date:
Location: Checked: Date:
Developed

1. Runoff Curve Number (CN)	CN	Soil Group	Area(Acres)
Cover description	70	C	0.000
Woods (Good)			
Gravel Streets, Pads and Buildings	89	C	0.100
Pasture Grassland Range (Good)	74	C	0.790
Row Crops - C (Good)	82	C	0.000

CN (weighted): 78.8
Total Area: 0.830 Acres

2. Runoff
Return Period: 10 YEAR
Rainfall, P: 4.75 in
Runoff, Q: 2.3150 in
Runoff Volume: 0.1901 Acres-Ft

Time of Concentration (SCS) Thu Jul 11 13:55:38 2019

Project: Culvert 13+80 By: Date: 07/11/19
Location: Checked: Date: 07/11/19
Developed

Curve Number : 78
Length of Flow : 580.00 ft
Average Land Slope : 11.74 %

Time of Concentration : 0.113 hrs, 6.8 mins

Graphical Peak Discharge Thu Jul 11 13:57:08 2019

Project: Culvert 13+80 By: Date: 07/11/19

Location: Checked: Date:

Developed

1. Data:

Drainage area:A = 0.8300 Acres

Runoff Curve Number:CN = 78

Time of Concentration:To = 6.77 min

Storm Type: = II

Pond and swamp areas spread
throughout watershed: = 0.00 percent of A
0.0000 Acres

2. Frequency:yr = 10

3. Rainfall, P(24-hour):in = 4.75

4. Initial abstraction, Ia: = 0.9316

5. Compute Ia/P: = 0.1330

6. Unit peak discharge, qu:csm/in = 955.485

7. Runoff, Q:in = 2.3310

8. Pond & swamp adjustment factor:Fp = 1.00

9. Peak Discharge, qp:cfs = 2.888

Culvert Design

Flow Rate(CFS): 2.88
Pipe Diameter(in): 12.00
Manning's n: 0.012
Length(ft): 35.00
Slope(ft/ft): 0.0900
Travel Time(min): 0.07
Flow Depth(ft): 5.60
Velocity(ft/s): 8.21

Runoff Curve Number and Runoff Thu Jul 11 14:04:57 2019

Project: Culvert 7+60 By: Date: 07/11/19
Location: Checked: Date:
Developed

1. Runoff Curve Number (CN)	CN	Soil Group	Area(Acres)
Cover description	70	C	2368.000
Woods (Good)			
Gravel Streets, Pads and Buildings	89	C	200.000
Pasture Grassland Range (Good)	74	C	200.000
Row Crops - C (Good)	82	C	0.000

CN (weighted): 71.7
Total Area: 2768.000 Acres

2. Runoff
Return Period: 25 YEAR
Rainfall, P: 5.40 in
Runoff, Q: 2.4807 in
Runoff Volume: 872.2245 Acres-Ft

Time of Concentration (SCS) Thu Jul 11 14:05:44 2019

Project: Culvert 7+60 By: Date: 07/11/19
Location: Checked: Date: 07/11/19
Developed

Curve Number : 72
Length of Flow : 28400.00 ft
Average Land Slope : 6.15 %

Time of Concentration : 3.702 hrs, 222.1 mins

Graphical Peak Discharge Thu Jul 11 14:06:46 2019

Project: Culvert 7+60 By: Date: 07/11/19

Location: Checked: Date:

Developed

1. Data:

Drainage area:A = 2768.0000 Acres

Runoff Curve Number:CN = 72

Time of Concentration:To = 222.10 min

Storm Type: = II

Pond and swamp areas spread
throughout watershed: = 1.00 percent of A
27.6800 Acres

2. Frequency:yr = 10

3. Rainfall, P(24-hour):in = 5.40

4. Initial abstraction, Ia: = 0.7778

5. Compute Ia/P: = 0.1440

6. Unit peak discharge, qu:csm/in = 135.543

7. Runoff, Q:in = 2.5102

8. Pond & swamp adjustment factor:Fp = 0.87

9. Peak Discharge, qp:cfs = 1269.706

Culvert Design

Flow Rate(CFS): 1269.71
Pipe Diameter(in): 96.00
Manning's n: 0.012
Length(ft): 80.00
Slope(ft/ft): 0.0900
Travel Time(min): 0.04
Flow Depth(in): 62.12
Velocity(ft/s): 37.49

Runoff Curve Number and Runoff

Thu Jul 11 13:38:20 2019

Project: Culvert 15+50
Location:
Developed

By:
Checked:

Date:
Date:

1. Runoff Curve Number (CN)

Cover description	CN	Soil Group	Area(Acres)
Woods (Good)	70	C	0.000
Gravel Streets, Parks and Buildings	86	C	0.100
Pasture Grassland Range (Good)	74	C	0.930
Row Crops - C (Good)	82	C	0.000

CN (weighted): 75.5
Total Area: 1.030 Acres

2. Runoff

Return Period: 10 YEAR
Rainfall, P: 4.75 in
Runoff, Q: 2.2868 in
Runoff Volume: 0.1982 Acres-Ft

Time of Concentration (SCS)

Thu Jul 11 13:40:57 2019

Project: Culvert 15+50
Location:
Developed

By:
Checked:

Date:
Date:

Curve Number : 75
Length of Flow : 590.00 ft
Average Land Slope : 12.40 %

Time of Concentration : 0.113 hrs, 6.8 mins

Graphical Peak Discharge

Thu Jul 11 13:41:13 2019

Project: Culvert 15+50

By:
Checked:

Date:
Date:

Location:

Developed

1. Data:

Drainage area:.....A = 1.0300Acres

Runoff Curve Number:.....CN = 75

Time of Concentration:.....Tc = 8.78 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 10

3. Rainfall,P(24-hour).....in = 4.75

4. Initial abstraction, Ia..... = 0.6067

5. Compute Ia/P..... = 0.1404

6. Unit peak discharge, q_u.....cfs/in = 952.999

7. Runoff,Q.....in = 2.2481

8. Pond & swamp adjustment factor.....Fp = 1.00

9. Peak Discharge,q_p.....cfs = 3.448

Culvert Design

Flow Rate(CFS): 3.46
Pipe Diameter(in): 12.00
Manning's n: 0.012
Length(ft): 30.00
Slope(ft/ft): 0.0280
Travel Time(min): 0.05
Flow Depth(in): 5.83
Velocity(fps): 9.11

Runoff Curve Number and Runoff

Thu Jul 11 13:49:06 2019

Project: Culvert 15+00
Location:
Developed

By:
Checked:

Date:
Date:

1. Runoff Curve Number (CN)

Cover description	CN	Soil Group	Area(Acres)
Woods (Good)	70	C	0.000
Gravel Streets, Parks and Buildings	86	C	0.100
Pasture Grassland Range (Good)	74	C	1.440
Row Crops - C (Good)	82	C	0.000

CN (weighted): 75.0
Total Area: 1.540 Acres

2. Runoff

Return Period: 10 YEAR
Rainfall, P: 4.75 in
Runoff, Q: 2.2490 in
Runoff Volume: 0.2882 Acres-Ft

Time of Concentration (SCS)

Thu Jul 11 13:49:42 2019

Project: Culvert 15+00
Location:
Developed

By:
Checked:

Date:
Date:

Curve Number : 75
Length of Flow : 640.00 ft
Average Land Slope : 12.00 %

Time of Concentration : 0.125 hrs, 7.5 mins

Graphical Peak Discharge

Thu Jul 11 13:50:10 2019

Project: Culvert 15+00

By:
Checked:

Date:
Date:

Location:

Developed

1. Data:

Drainage area:.....A = 1.5400Acres

Runoff Curve Number:.....CN = 75

Time of Concentration:.....Tc = 7.50 min

Storm Type:..... = II

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 10

3. Rainfall,P(24-hour).....in = 4.75

4. Initial abstraction, Ia..... = 0.6067

5. Compute Ia/P..... = 0.1404

6. Unit peak discharge, q_u.....cfs/in = 922.279

7. Runoff,Q.....in = 2.2481

8. Pond & swamp adjustment factor.....Fp = 1.00

9. Peak Discharge,q_p.....cfs = 4.999

Culvert Design

Flow Rate(CFS): 4.99
Pipe Diameter(in): 12.00
Manning's n: 0.012
Length(ft): 35.00
Slope(ft/ft): 0.0280
Travel Time(min): 0.06
Flow Depth(in): 7.00
Velocity(fps): 9.10

Runoff Curve Number and Runoff Thu Jul 11 13:08:14 2019

Project: Culvert 19+50
Location: Developed
By: Checked: Date:

1. Runoff Curve Number (CN)	CN	Soil Group	Area(Acres)
Cover description	70	C	0.990
Woods (Good)			
Gravel Streets, Pads and Buildings	89	C	0.100
Pasture Grassland Range (Good)	74	C	0.000
Row Crops - C (Good)	82	C	0.000

CN (weighted): 71.9
Total Area: 0.990 Acres

2. Runoff
Return Period: 10 YEAR
Rainfall, P: 4.75 in
Runoff, Q: 2.0009 in
Runoff Volume: 0.1581 Acre-Ft

Time of Concentration (SCS) Thu Jul 11 13:08:47 2019

Project: Culvert 19+50
Location: Developed
By: Checked: Date:

Curve Number : 72
Length of Flow : 490.00 ft
Average Land Slope : 16.30 %

Time of Concentration : 0.089 hrs, 5.3 mins

Graphical Peak Discharge Thu Jul 11 13:09:19 2019

Project: Culvert 19+50 By: Date: 07/11/19

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 0.9900Acres
Runoff Curve Number:.....CN = 72
Time of Concentration:.....Tc = 5.34 min
Storm Type:..... = H
Pond and swamp areas spread
throughout watershed:..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 10

3. Rainfall, P(24-hour).....in = 4.75

4. Initial abstraction, Ia..... = 0.7778

5. Composite Ia/P..... = 0.1637

6. Unit peak discharge, qu.....cfs/sf = 984.064

7. Runoff, Q.....in = 2.0072

8. Pond & swamp adjustment factor, Fp = 1.00

9. Peak Discharge, qp.....cfs = 3.065

Culvert Design

Flow Rate(CFS): 3.06
Pipe Diameter(in): 12.00
Manning's n: 0.012
Length(ft): 40.00
Slope(ft/ft): 0.0380
Travel Time(min): 0.08
Flow Depth(ft): 0.44
Velocity(fps): 8.83

Runoff Curve Number and Runoff Thu Jul 11 13:19:46 2019

Project: Culvert 19+00
Location: Developed
By: Checked: Date:

1. Runoff Curve Number (CN)	CN	Soil Group	Area(Acres)
Cover description	70	C	0.750
Woods (Good)			
Gravel Streets, Pads and Buildings	89	C	0.100
Pasture Grassland Range (Good)	74	C	1.000
Row Crops - C (Good)	82	C	0.000

CN (weighted): 75.2
Total Area: 1.850 Acres

2. Runoff
Return Period: 10 YEAR
Rainfall, P: 4.75 in
Runoff, Q: 2.1013 in
Runoff Volume: 0.3239 Acre-Ft

Time of Concentration (SCS) Thu Jul 11 13:20:28 2019

Project: Culvert 19+00
Location: Developed
By: Checked: Date:

Curve Number : 73
Length of Flow : 600.00 ft
Average Land Slope : 14.50 %

Time of Concentration : 0.114 hrs, 6.8 mins

Graphical Peak Discharge Thu Jul 11 13:21:36 2019

Project: Culvert 19+00 By: Date:

Location: Checked: Date:

Developed

1. Data:

Drainage area:.....A = 1.8500Acres
Runoff Curve Number:.....CN = 73
Time of Concentration:.....Tc = 6.81 min
Storm Type:..... = R
Pond and swamp areas spread
throughout watershed:..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 10

3. Rainfall, P(24-hour).....in = 4.75

4. Initial abstraction, Ia..... = 0.7897

5. Composite Ia/P..... = 0.1637

6. Unit peak discharge, qu.....cfs/sf = 948.883

7. Runoff, Q.....in = 2.0862

8. Pond & swamp adjustment factor, Fp = 1.00

9. Peak Discharge, qp.....cfs = 5.711

Culvert Design

Flow Rate(CFS): 3.06
Pipe Diameter(in): 12.00
Manning's n: 0.012
Length(ft): 39.00
Slope(ft/ft): 0.0400
Travel Time(min): 0.08
Flow Depth(in): 5.24
Velocity(fps): 8.27

Runoff Curve Number and Runoff Thu Jul 11 12:50:55 2019

Project: Culvert 22+60 By: Date: 07/11/19
Location: Checked: Data:
Developed

1. Runoff Curve Number (CN)
Cover description CN Soil Group Area(Acres)
Woods (Good) 70 C 0.850
Gravel Streets, Pads and Buildings 89 C 0.100
Pasture Grassland Range (Good) 74 C 0.000
Row Crops - C (Good) 82 C 0.000

CN (weighted): 72.0
Total Area: 0.950 Acres

2. Runoff
Return Period: 10 YEAR
Rainfall, P: 4.75 in
Runoff, Q: 2.0072 in
Runoff Volume: 0.1586 Acres-Ft

Time of Concentration (SCS) Thu Jul 11 12:51:35 2019

Project: Culvert 22+60 By: Date: 07/11/19
Location: Checked: Data: 07/11/19
Developed

Curve Number : 72
Length of Flow : 410.00 ft
Average Land Slope : 15.80 %

Time of Concentration : 0.082 hrs, 4.9 mins

Graphical Peak Discharge Thu Jul 11 12:52:12 2019

Project: Culvert 22+60 By: Date:
Location: Checked: Data:
Developed

1. Data:

Drainage area:.....A = 0.9500Acres

Runoff Curve Number:.....CN = 72

Time of Concentration:.....Tc = 4.95 min

Slope Type:..... = H

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 10

3. Rainfall, P(24-hour).....in = 4.75

4. Initial abstraction, Ia..... = 0.7778

5. Compute Ia/P..... = 0.1637

6. Unit peak discharge, q_ucfs/in = 984.064

7. Runoff, Q.....in = 2.0072

8. Pond & swamp adjustment factor, Fp = 1.00

9. Peak Discharge, q_pcfs = 2.032

Culvert Design

Flow Rate(CFS): 2.03
Pipe Diameter(in): 12.00
Manning's n: 0.012
Length(ft): 48.00
Slope(ft/ft): 0.0330
Travel Time(min): 0.09
Flow Depth(in): 5.40
Velocity(ft/s): 8.85

Runoff Curve Number and Runoff Thu Jul 11 13:00:10 2019

Project: Culvert 21+00 By: Date:
Location: Checked: Data:
Developed

1. Runoff Curve Number (CN)
Cover description CN Soil Group Area(Acres)
Woods (Good) 70 C 0.880
Gravel Streets, Pads and Buildings 89 C 0.100
Pasture Grassland Range (Good) 74 C 0.000
Row Crops - C (Good) 82 C 0.000

CN (weighted): 71.9
Total Area: 0.980 Acres

2. Runoff
Return Period: 10 YEAR
Rainfall, P: 4.75 in
Runoff, Q: 2.0024 in
Runoff Volume: 0.1636 Acres-Ft

Time of Concentration (SCS) Thu Jul 11 13:05:55 2019

Project: Culvert 21+00 By: Date: 07/11/19
Location: Checked: Data: 07/11/19
Developed

Curve Number : 72
Length of Flow : 450.00 ft
Average Land Slope : 16.30 %

Time of Concentration : 0.086 hrs, 5.3 mins

Graphical Peak Discharge Thu Jul 11 13:06:10 2019

Project: Culvert 21+00 By: Date: 07/11/19
Location: Checked: Data:
Developed

1. Data:

Drainage area:.....A = 0.9800Acres

Runoff Curve Number:.....CN = 72

Time of Concentration:.....Tc = 5.34 min

Slope Type:..... = H

Pond and swamp areas spread
throughout watershed..... = 0.00 percent of A
0.0000 Acres

2. Frequency.....yr = 10

3. Rainfall, P(24-hour).....in = 4.75

4. Initial abstraction, Ia..... = 0.7778

5. Compute Ia/P..... = 0.1637

6. Unit peak discharge, q_ucfs/in = 984.064

7. Runoff, Q.....in = 2.0072

8. Pond & swamp adjustment factor, Fp = 1.00

9. Peak Discharge, q_pcfs = 3.024

Culvert Design

Flow Rate(CFS): 3.02
Pipe Diameter(in): 12.00
Manning's n: 0.012
Length(ft): 40.00
Slope(ft/ft): 0.0350
Travel Time(min): 0.08
Flow Depth(in): 5.41
Velocity(ft/s): 8.80

Channel Design (Non-Erodible)

Channel Type: Trapezoidal, Equal Side Slopes

Dimensions: Left Side Slope 1.00:1

Right Side Slope 1.00:1

Base Dimension: 2.00

Wetted Perimeter: 7.66

Area of Wetted Cross Section: 8.00

Channel Slope: 1.5000

Manning's n of Channel: 0.0356

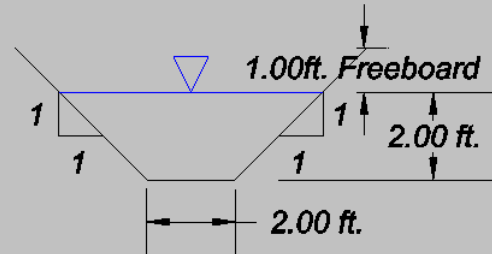
Discharge: 42.11 cfs

Depth of Flow: 2.00 feet

Velocity: 5.26 fps

Channel Lining: 6 inch Rock Rip-Rap

Freeboard: 1.00 feet



Trapezoidal Channel

Equal Side Slopes

Channel Lining: TRM w/ Rip Rap Checks

Insert Revegetation Plan

The site stabilization practices described in this SWPPP include temporary and permanent stabilization measures that ensure that disturbed portions of the site are stabilized, and that existing vegetation is preserved when possible. Final stabilization measures may include but are not limited to permanent protection such as pavement, compacted gravel, permeable pavements/pavers, buildings, stable waterways (riprap, concrete, grass or pipe), a healthy, vigorous stand of grass or natural vegetation that uniformly covers at least 70 percent of the ground, stable outlet channels with velocity dissipation that directs site runoff to a natural watercourse, and any other approved structure or material.

Requirements for Temporary and Final seeding and stabilization of the site are shown on Sheets 1 and 2 of the project plans which includes rates for lime, fertilizer, seed and applications rates.

Slopes shall be prepared as required, seeded and covered with slope matting as shown in the project plans (required for slopes steeper than 2:1).

Areas that do not germinate or obtain an established vegetative cover of greater than 70% shall be re-seeded and protected until the vegetative cover is obtained.

Stabilization Practice Schedule

Address: 1000 Old Fields Road, Old Fields, WV

Stabilization Practices	Location	Time Frame*

* Time Frame: Includes dates of major grading activities, dates when construction activities temporarily or permanently ceases on a portion of the site, date when stabilization measures are initiated.

Structural Control Sheet

Address: 1000 Old Fields Road, Old Fields, WV

[illegible]

INSPECTION REPORT

Address: 1000 Old Fields Road, Old Fields, WV

Date: _____

Inspector/Title: _____

Erosion and Sediment Control Measure	Satisfactory Yes/No	Comments

Entrance(s): Clear of Mud, Dirt, Debris, or Tracking Yes _____, No _____

Corrective Action _____

Outfall Locations: BMPs are in place and working. Yes _____, No _____

Corrective Action _____

Disturbed Area(s): BMPs are in place and working. Yes _____, No _____

Corrective Action _____

Summary of Findings:

Non-Compliance Issues:

Site is in Compliance Yes _____ No _____

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I also certify that a storm water pollution prevention plan, including both construction and post construction controls, has been prepared for the site in accordance with the permit and that such plan complies with approved State and/or local sediment and erosion plans or permits and/or storm water management plans or permits. I am aware that signature and submittal of the Site Registration Application is deemed to constitute my determination of eligibility under one or more of the requirements of Permit Appendix A.I.11., related to the Endangered Species Act requirements. To the best of my knowledge, I further certify that such discharges and discharge related activities will not have an effect on properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, or are otherwise eligible for coverage under the permit. I am also aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name and Title

Telephone Number

Signature

Date

